ID: CRDC2103
Marinus van der Sluijs
Identifying key issues to maintain and improve Australian cotton fibre quality (including CottonInfo technical lead)

Organisation: van der Sluijs, Marinus (Rene) t/a Textile Technical Services
App Type: Full Research Proposal
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CRDC ID:	CRDC2103
Project Title:	Identifying key issues to maintain and improve Australian cotton fibre quality (including CottonInfo technical lead)
Project Start Date:	1 October 2020
Project End Date:	30 June 2023
Principal Researcher:	Marinus van der Sluijs
Email:	renevandersluijs@gmail.com
Manager/Student Supervisor:	Marinus van der Sluijs
Administrator:	Marinus van der Sluijs
Organisation:	van der Sluijs, Marinus (Rene) t/a Textile Technical Services

There is a document upload section at the end of this application if you need to provide further information that cannot be entered as plain text into Fluxx, for example: supporting evidence including photos, data, trial reports, etc for each milestone or the project in general.

▼ Final Report

Confidential or for public release? Public Release

Recognition of support: Edit the text provided and add additional funding partners and research collaborators.
:

Textile Technical Services acknowledges the financial assistance of the Cotton Research and Development Corporation in order to undertake this project.

Research Questions & Project Milestone Updates

1. Project management milestones			
#	**Description**	**Performance Indicator**	**Start - End**
1.1	What is the impact of strippers on yield, turn out and quality?	Conduct one field experiment to compare the impact of stripper vs. spindle harvesting on yield, turn-out and fibre quality. Economic benefits in terms of costs and returns to grower will also be determined. Report provided and results presented to the industry.	1/10/20 - 30/06/23

Created: 9 November 2022 | Report: 121 - Progress Report
Final Update | Status: Achieved
Although, this milestone has been completed there is still the option to conduct a further trial during the forthcoming season, should the opportunity arise to compare spindle to stripper in higher yielding (above 6 bales/ha) crops.

Have been in contact with a member of the DCRA executive to inform them of our continued interest in conducting these trials to answer this outstanding question.

Milestone Status:
Accepted?:
Locked?:

Created: 31 July 2023 | Report: 123 - Final Report
Final Update | Status: Achieved
This milestone was achieved.

In total four commercial scale harvesting trials were conducted. Results were presented at the 2018 & 2022 Australian Cotton Conferences. Results have also been published in the Australian Cotton Grower magazine in 2018 and 2022.

Milestone Status: Green
Accepted?: Yes
Locked?: Yes

Created: 18 October 2023 | Report: 123 - Final Report
Final Update | Status: Partially achieved
Have been in contact with DCRA

Milestone Status: Green
Accepted?: Yes
Locked?: Yes

Created: 18 October 2023 | Report: 123 - Final Report
Final Update | Status: Achieved
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Milestone Status: Green
Accepted?: Yes
Locked?: Yes

2. Lead the continuous improvement of the industry's best practice recommendations for fibre quality			
#	**Description**	**Performance Indicator**	**Start - End**
2.1	Assist CCAA and ACGA annually in their quest for best practice; report on activities undertaken with CCAA and ACGA provided to CRDC	a) Undertake management and analysis of local and international Round Trials as well as any industry trials that are deemed to be important to the industry. b) Update and maintain Classing and Ginning BMP Handbooks; provide updated versions to CRDC. c) Attend and present at pre and post season	1/10/20 - 30/06/23

		CCAA and ACGA meetings.	

Created: 9 November 2022 | Report: 121 - Progress Report
Progress Update | Status: Partially Achieved
Classing

There are currently five classing facilities in Australia, all of which are members of the Cotton Classers Association of Australia (CCAA), of which all 18 instruments are 1000 HVI™ lines.

Unfortunately, one of the five classing facilities still does not participate in any of the CCAA initiatives.

CCAA Check Test Program
The CCAA have decided to discontinue the Check Test Program and to participate instead in the USDA High Volume Instrument Check Level Program, which has an average of forty one instruments worldwide participating in this monthly program. The program provides information on all the HVI properties (including micronaire, strength and elongation, length, length uniformity and short fibre index, colour both reflectance and yellowness as well as trash both % area and count) of individual instruments and their deviation from a known value.

Unfortunately, there have been a number of issues with participation and reporting and at this stage only a few results have been received. It is hoped that these issues will be rectified prior to the commencement of the next season.

CSITC Round Trials
Four cotton samples of Upland cotton with known values are sent and tested by HVI by the participating facility six times each day for five days. Each facility tests the six fibre properties of micronaire, strength, length, length uniformity and colour (Rd and +b). This means that 900 separate test results (150 tests of 6 parameters) from each instrument are evaluated. Results for all the tests are collected by the USDA and evaluated by the Bremen Fibre Institute. Instruments are given an overall ranking (combining all fibre properties to indicate the level of performance in comparison to all other instruments). A ranking of their performance for each of the six fibre properties is also performed. These rankings are based on how close the mean value of each instrument is to the grand mean value of all participating instruments. A score of zero would be perfect and a value less than 1 would signify that the instrument was within tolerance.

All CCAA members participate each year in the second and third Round Trials with participation in the first and fourth Round Trials optional.

Details of the number of facilities, instruments, and the median results for the various fibre characteristics, as well as the overall result for the Round Trials from 2020 to 2022 are presented in the attached technical reports.

The performance of the Australian instruments for the second Round Trial for 2022 was varied with some instruments ranking in the top 20; with three instruments out of tolerance for micronaire, one for strength and one for colour in terms of +b. This resulted in an increase in OER from 0.31 to 0.39 which was higher than the worldwide OER of 0.35. In contrast the performance of the Australian instruments for the third Round Trial for 2022 were very good resulting in an decrease in OER from 0.39 to 0.35 which was just within the targeted range of 0.30 to 0.35.

Best Management Practice (BMP)
BMP Handbook
The BMP Handbook for Classing was updated in the first quarter of 2021 in conjunction with the CCAA. The updated version (Version 24.0, dated April 2022) was used during the 2022 season to determine the compliance of the classing facilities to the BMP Handbook for Classing.

BMP Audits
Four classing facilities - Proclass Goondiwindi and Griffith, Australian Classing Services and AFF Classing Office have been audited and recommended for certification.

Attended and presented at the post season meeting in November 2022.

Ginning
BMP Handbook
The BMP Handbook for Ginning was extensively updated in 2021 (version 22.0, dated February 2022) in conjunction with the Australian Cotton Ginners Association (ACGA). The updated version of the BMP Handbook was used during the 2022 ginning season to determine the compliance of the gins to the BMP Handbook for Ginning.

BMP Audits
Thirty two gins were audited by either René van der Sluijs and Richard Millyard. Thirty gins were recommended for certification.

Australian Cotton Industry Forum (ACIF)
Assisted in preparing ACGA sector submission for ACIF meeting and attended the meeting in September 2022.

Milestone Status:
Accepted?:
Locked?:

Created: 31 July 2023 | *Report: 123 - Final Report*
Final Update | Status: Achieved
This milestone has been achieved

Attached please find separately the final report for this activity

Milestone Status: Green
Accepted?: Yes
Locked?: Yes

Created: 18 October 2023 | *Report: 123 - Final Report*
Final Update | Status: Achieved
See comments.

Milestone Status: Green
Accepted?: Yes
Locked?: Yes

2.2	Ensure that myBMP is up to date	Facilitate annual review of practices in the fibre quality module of myBMP module in collaboration with the coordinator for CRDCs 'Building Adaptive Capacity' coordinator (Rachel Holloway). Fibre quality module is updated and maintained to reflect current practices.	1/10/20 - 30/06/23

Created: 10 November 2022 | *Report: 121 - Progress Report*
Progress Update | Status: Partially Achieved
Another review will be conducted before the project is completed in 2023.

Milestone Status:
Accepted?:
Locked?:

Created: 31 July 2023 | *Report: 123 - Final Report*
Final Update | Status: Achieved
This milestone has been achieved.

The fibre quality module is currently up to date with a further review planned to be conducted in conjunction with Chris Cosgrove later this year.

Milestone Status: Green
Accepted?: Yes
Locked?: Yes

Created: 18 October 2023 | *Report: 123 - Final Report*
Final Update | Status: Achieved
see comment.

Milestone Status: Green
Accepted?: Yes
Locked?: Yes

Created: 19 October 2023 | *Report: 123 - Final Report*
Final Update | Status: Achieved
The fibre quality module is currently up to date with a further review planned to be conducted in conjunction with Chris Cosgrove in 2023.

Milestone Status:
Accepted?:
Locked?:

2.3	Lead the industry's extension efforts on fibre quality management	Annual exchange of research results/activities among researchers/industry experts working within the issue area facilitated. Report on annual exchange provided to CRDC. In particular: a) Updating of relevant chapters in Australian Cotton Production Manual as requested. b) Draft fibre quality e-news information newsletters c) Update CSD Facts on Friday newsletters concerning harvesting and ginning. d) Draft articles for mainly local but also international publication. e) Attend CottonInfo meetings f) Respond to grower queries g) Present at field days/workshops. h) Attend and present at the Cotton Collective, Australian Cotton Conference and Australian Cotton Scientists Research Conference.	1/10/20 - 30/06/23

Created: 9 November 2022 | Report: 121 - Progress Report
Progress Update | Status: Partially Achieved
CottonInfo.
- Attended the Team Workshop in Brisbane in July 2022.
- Attended the Cotton Research update 2022 at Yanco Agricultural Institute on 15 September and presented 'Fibre Quality Stuff'.
- Recorded a podcast in October with Angus Marshall and Ella Arnold from CSD entitled 'Managing for Micronaire in Cool Climates' as part of the Cotton Yarns series. This will be released in November.

Other
- Attended the Australian Cotton Conference and presented 'Pickers and Strippers, the results are in', during the Getting more from rain grown cotton session on 17 August.
- Attended the International Cotton Conference in Bremen via videoconferencing and presented two papers:
'The Effect of various processing stages during ginning on fibre quality', during the Cotton Quality and Testing session on 29 October, and
'Commercial Standardization of Instrument Testing of Cotton- Results and Benefits for Cotton Production, Trading and Spinning' during the Cotton Quality and Testing session on 30 September in conjunction with Axel Drieling.
- Attended and Chaired the 32nd Meeting of the Task Force for CSITC on 28 September.
- Attended the International Committee on Cotton Testing Methods (ICCTM) on 27 September and chaired the Spinnability session. Made two presentations:
' Why the continued fuss about colour?' and 'Analysis of ICA Bremen Round Trial Results: Correlations between Length Methods' in conjunction with Axel Drieling.

Milestone Status:
Accepted?:
Locked?:

Created: 6 August 2023 | Report: 123 - Final Report
Final Update | Status: Achieved
This milestone has been achieved.

CottonInfo:
- Attended and presented 'The Important Fibre Quality Parameters and how to control them? ' at the 2023 Cotton Marketing, Pricing and Fibre Workshops, held in Goondiwindi and Mungindi in March 2023.
- The above mentioned presentation was recorded and released as a podcast.
- Attended the CottonInfo meeting in Brisbane in May to finalise the 2022-23 Annual Operational Plan.
- Compiled Fact Sheet on 'Turn Out' in May 2023.
- Compiled Fact Sheet on 'Cavitoma in Cotton'in June 2023.

Other:
- Attended and presented ' Urgent Prescription: Less Gin, More Tonic!'during the ginning session of the Beltwide Cotton Conference held in New Orleans in January 2023.
- Compiled 'Cotton Ginners provide some timely advice for Growers' for Cotton Australia Cotton Matters Newsletter 31 March 2023.
https://cottonaustralia.com.au/growers-articles/cotton-ginners-provide-some-timely-advice-for-growers
- Compiled article for Grain Central in April 2023.
https://www.graincentral.com/cropping/cotton/namoi-cuts-earnings-outlook-during-delayed-start/.
- Certified by International Cotton Association/Bremen as a Quality Expert (QE2341) in April 2023. There are currently 31 certified

quality experts.
- One publication already submitted previously for information purposes.
- Submitted two abstract to AACS committee for consideration to present at the conference in September 2023.

Milestone Status: Green
Accepted?: Yes
Locked?: Yes

Created: 19 October 2023 | Report: 123 - Final Report
Final Update | Status: Achieved
As per the previous reports I have provided post-harvest support and technical leadership to CottonInfo and the various industry Associations.

Over the past 6 months I have conducted the following:

CottonInfo:
- Attended and presented 'The Important Fibre Quality Parameters and how to control them? ' at the 2023 Cotton Marketing, Pricing and Fibre Workshops, held in Goondiwindi and Mungindi in March 2023.
- The above mentioned presentation was recorded and released as a podcast.
- Attended the CottonInfo meeting in Brisbane in May to finalise the 2022-23 Annual Operational Plan.
- Compiled Fact Sheet on 'Turn Out' in May 2023.
- Compiled Fact Sheet on 'Cavitoma in Cotton'in June 2023.

Other:
- Attended and presented ' Urgent Prescription: Less Gin, More Tonic!'during the ginning session of the Beltwide Cotton Conference held in New Orleans in January 2023.
- Compiled 'Cotton Ginners provide some timely advice for Growers' for Cotton Australia Cotton Matters Newsletter 31 March 2023.
https://cottonaustralia.com.au/growers-articles/cotton-ginners-provide-some-timely-advice-for-growers
- Compiled article for Grain Central in April 2023.
https://www.graincentral.com/cropping/cotton/namoi-cuts-earnings-outlook-during-delayed-start/.
- Certified by International Cotton Association/Bremen as a Quality Expert (QE2341) in April 2023. There are currently 31 certified quality experts.
- One publication already submitted previously for information purposes.
- Submitted two abstract to AACS committee for consideration to present at the conference in September 2023.

Milestone Status:
Accepted?:
Locked?:

3. What is the impact of priming defoliation on fibre quality and trash content?

#	Description	Performance Indicator	Start - End
3.1	Field experiments investigating impact of priming defoliation on fibre quality, trash levels and field management	At least three field experiments in various cotton grower areas with ≤ 50 mL of Thidiazuron at 7 NACB. Report comparing yield, turn-out and fibre quality results from priming and conventional defoliation practices provided to CRDC.	1/10/23 - 30/06/23

Created: 10 November 2022 | Report: 121 - Progress Report
Progress Update | Status: Achieved
Defoliation is the application of chemicals to encourage or force cotton leaves to drop from the plant in preparation for harvesting. This application is often a combination of defoliants, boll openers and crop oil. Cotton crops are generally considered ready for defoliation at either 60% open bolls, or as more commonly used, due to its easier calculation, four nodes above cracked boll (4 NACB).

The question usually asked is how defoliation can be sped up, without sacrificing quality and yield, thus allowing spindle harvesters into the field earlier before the autumn break occurs which could result in a delay in harvesting and possibly result in quality and yield penalties as has been the case this year.

One method of accomplishing this is by the theory of priming defoliation, which is the application at 6 to 8 NACB, targeting 7 NACB of low rates (50ml/ha) of Thidazuron (TDZ) liquid followed by normal defoliation processes. This application of TDZ which is a hormone-based defoliant will induce leaf drop by changing the hormone status in the crop and may also removing small

unwanted bolls that take too long to mature and open. Another benefit of priming defoliation, in terms of SNSW, is that the application of TDZ prior to the 31st March would not require pupae busting thereby reducing costs and allowing for a smoother transition into a winter rotation crop.

This theory of inducing leaf drop was initially proposed to control late season outbreaks of pests such as thrips, jassids, cluster caterpillar, loopers and spur-throated locusts.

Preliminary trials were first conducted in SNSW by Steve Buster in the 2018-19 and 2019-20 seasons with favourable results. Unfortunately, these trials were not conducted using a randomised design and hence no statistical conclusions could be drawn but did warrant further investigation.

Commercial scale trials were conducted in the 2020-21 and 2021-22 seasons at Point Farms Ag Co and Cavaso Farming both in Darlington Point. In summary the data from these trials suggest the following:
- No statistically significant differences in Yield
- No statistically significant differences in fibre quality as measured by HVI.
- Statistically significant positive differences (2 to 4%) in lint turn out.
- Cost of priming defoliation offset by the saving due to no pupae busting.
- Possibility in harvesting one to two weeks earlier to avoid adverse weather conditions and possibility of earlier planting of winter crop.

More in-depth information is provided in the attached document.

Although the objectives of the milestone have been achieved, there are however still a number of questions that need to be answered:
- All the trials were conducted on Sicot 746 B3F and the influence of variety is thus unknown. Hence trials with other popular varieties such as Sicot 714 B3F and Sicot 606 B3F should be conducted.
- All the trials were conducted in the Darlington Point area and as such it is not possible at this stage to make a recommendation until the trials are expanded to other areas such as Hillston and possibly to the Macquarie Valley.
- Is there any impact on germination? Seed samples to be collected after the gin stand for analysis.

Milestone Status:
Accepted?:
Locked?:

Created: 31 July 2023 | *Report: 123 - Final Report*
Final Update | Status: Achieved
This milestone has been achieved.
A total of six commercial scale trials were conducted.

Below is summary detail of the trial in 2023.

Farm 1 agreed to participate in a further trial in one paddock (RW4)

Details of the field are as follows:
Variety Sicot 746 B3F
Date Plant - 18 October
Nitrogen applied - 50 kg/ha as water run
Priming - 4 April, by ground rig using 50 mm TDZ
Defoliation
- Pass 1 (20/4/22)
Sledge @ 80ml,
2L Promote,
0.5L Trump oil
- Pass 2 (29/4/22)
Sledge @ 80ml,
2.4L Promote,
0.5L Trump oil
Harvest date – 15th May
Yield - 9.17 bales/ha

Seventeen modules where produced for each treatment and ginned on 20 July at RivCott Ginning

Every single bale was tested at ProClass Griffith, so the information is as accurate as it can be. In terms of fibre and seed quality there were no statistically significant or practical differences between the two treatments.

All the bales were visually classed as 11-2.

The lint turnout % were also similar at 43.1 and 42.6%.

Please see attached sheet for further information.

Milestone Status: Green
Accepted?: Yes
Locked?: Yes

Created: 19 October 2023 | Report: 123 - Final Report
Final Update | Status: Achieved
A total of six commercial scale trials were conducted. Further trials are planned for 2023 to gather more information and knowledge before reporting to the wider industry

Milestone Status:
Accepted?:
Locked?:

4. Investigate the influence of harvesting and ginning on SCF levels in SNSW

#	Description	Performance Indicator	Start - End
4.1	At least three field experiments in various cotton grower areas with ≤ 50 mL of Thidiazuron at 7 NACB. Report comparing yield, turn-out and fibre quality results from priming and conventional defoliation practices provided to CRDC.	Complete at least three field experiments to determine the effect of harvesting on mechanical seed damage Report on seed damage provided to CRDC.	1/10/21 - 30/06/23

Created: 10 November 2022 | Report: 121 - Progress Report
Final Update | Status: Achieved
See 3.1

Milestone Status:
Accepted?:
Locked?:

Created: 14 October 2023 | Report: 123 - Final Report
Final Update | Status: Achieved
This milestone was achieved.

As per 3.1. six commercial scale trials were conducted. All measurements, including visible seed damage, were conducted and reported.

Milestone Status: Green
Accepted?: Yes
Locked?: Yes

4.2	Field experiments Investigating impact of ginning on SCF levels	Complete three large scale commercial trials to determine the effect of various processing adjustments in the gin on SCF Report comparing various gin stand settings on SCF provided to CRDC.	1/10/20 - 30/06/23

Created: 14 November 2022 | Report: 121 - Progress Report
Progress Update | Status: Partially Achieved
Seed cotton and seed samples from 59 gin runs were collected. The seed samples were collected from one gin stand at Southern Cotton and RivCott Ginning and sent to Futari Grain Technology, in Narrabri, for acid delinting and characterisation in accordance with 'Tests and Procedures for Cottonseed quality evaluation', as described by Mississippi State University.

Analysis of the results found that on average 10% of the seeds entering the gin had either minor or major visible mechanical damage which increased to 25% after the gin stand, which is a 150% increase- see attachment for individual results per gin run.

At this stage cannot comment if this is high or not and am hoping to do similar trials further North to gather further information and insight into this. The literature does highlight seed cotton moisture and drying as big influencing factors.

I did not collect information in terms of incoming moisture, number of burners & temp, but have approached the relevant gins to determine whether this information can be provided.

For reference, images of major, minor and pin hole damage have been attached

Milestone Status:
Accepted?:
Locked?:

Created: 10 August 2023 | Report: 123 - Final Report
Final Update | Status: Achieved
Milestone achieved

A number of commercial scale trials have been conducted. Seed and seed cotton samples have been collected and tested. Results have been reported in Progress Reports.

Milestone Status: Green
Accepted?: Yes
Locked?: Yes

Created: 19 October 2023 | Report: 123 - Final Report
Final Update | Status: Achieved
A number of commercial scale trials have been conducted. Seed and seed cotton samples have been collected and tested. Results have been reported in previous Progress Reports.

Milestone Status:
Accepted?:
Locked?:

5. Investigate the impact of limited water on fibre quality

#	Description	Performance Indicator	Start - End
5.1	Field experiments Investigating the impact of reduced irrigations on yield and fibre quality	Complete three field experiments to determine the effect of reduced irrigation and timing on fibre quality Report comparing fibre quality and yield results for reduced irrigations provided to CRDC.	1/07/21 - 30/06/23

Created: 21 November 2022 | Report: 121 - Progress Report
Progress Update | Status: Partially Achieved
The cold and wet conditions experienced over mainly SNSW during the 2021 season resulted in major delays in defoliation and harvesting as well as the removal of modules from the field, transportation of modules to the gin and ginning.

As a consequence round modules with high moisture delivered to the gins are causing major issues in terms of processing performance and fibre quality. At this stage approximately 28% of the bales classed were below base in terms of colour, 5% for trash and 11% for micronaire.

Moisture is therefor becoming a major issue which requires further investigation especially as the 2022 season has already recorded the wettest year on record with the yearly record already achieved by the end of October and the a wet season forecast by the BOM.

Moisture data from the previous season was obtained from Southern Cotton for further analysis- see the two Moisture Data 1& 2 attachments. Attachment 1 provides the picker data for one large field that produced 363 round modules as well as the corresponding ginning data. Sheet 1 provides interesting data on the fluctuation in moisture content throughout the day and when picking was stopped due to moisture content being too high, with 16.5% of the harvested modules above 12%. Sheet 2 provides information on the corresponding gin moisture content setup when the modules were ginned 3 months later, which is considered normal.

Attachment 2 also provides picker and gin data for 5 fields. The blanks in the picker moisture data is either attributed to issues with recording or the fact that the moisture content was above 13%, which the picker currently does not record.

Data for the current season has been requested and will be provided by Southern Cotton once all the information has been collated. Of interest is the fact that Namoi Trangie have almost 4000 round modules from this season which will be ginned next year once all the required modifications, upgrades and maintenance has been completed. It is hoped that data from this will be

shared for further analysis.

Milestone Status:
Accepted?:
Locked?:

Created: 31 July 2023 | Report: 123 - Final Report
Final Update | Status: Achieved
This milestone achieved.

Due to unseasonal cold and wet conditions experienced during a number of growing seasons the focus of this initiative changed from irrigation to moisture as this was becoming a major issue and required further information. Results of this work have been reported in Progress Reports.

Below is further analysis of data received from 2 gins.

The issue with high module moisture has added some extra complications which were not foreseen earlier:
- Bale weights have been higher than 227 kg which could have implications around shipping.
- Bales landed in warehouse are lighter than reported gin weights. - Over-compressed bales. “hard” bales that are opened (and over a 7-14 day period) do not spring or fan. This makes handling of the bale for spinner laydown extremely difficult.

Data from Southern Cotton and RivCott Ginning for the 2022 season reveal the following:
1) Southern Cotton
Twelve percent of the modules delivered to the gin were between 11 and 11.9%, 2% between 12 and 12.9%, 1.5% between 13 and 13.9%, 0.3% between 14 and 14.9% and 0.2% between 15 and 15.9%.
As a consequence 0.27% (370 bales) of the bales produced had moisture levels above 9%.
2) RivCottGinning
Data revealed that there has been a statistically significant increase in gas usage since 2018- see attachment.

The issue of moisture will be further investigated in the follow up project. Access to gin/classing data has been granted to analyse data from the ~6000 modules left over from the 2022 season in the Macquarie Valley.

Milestone Status: Green
Accepted?: Yes
Locked?: Yes

Created: 19 October 2023 | Report: 123 - Final Report
Final Update | Status: Achieved
Due to unseasonal cold and wet conditions experienced during a number of growing seasons the focus of this initiative changed from irrigation to moisture as this was becoming a major issue and required further information. Results of this work have been reported in Progress Reports.

Milestone Status:
Accepted?:
Locked?:

5.2	Determine financial implications of reduced irrigations	Determine financial implications of reduced irrigations	1/07/21 - 30/06/23

Created: 10 August 2023 | Report: 123 - Final Report
Final Update | Status: Achieved
Milestone achieved.

Please see comments above in point 5.1

Milestone Status: Green
Accepted?: Yes
Locked?: Yes

6. What is the impact of alternative defoliation practices on fibre quality and trash content?			
#	**Description**	**Performance Indicator**	**Start - End**
6.1	Field experiments investigating impact of alternative defoliation practices, such as	At least one field experiment to determine the effect of using defoliant containing Paraquat	1/07/21 - 30/06/23

	Spray.Seed® which contains Paraquat Dichloride, on regrowth and gin turn out.	Dichloride on regrowth and trash content. Report provided detailing the impact of defoliation practice on regrowth and gin turn out provided to CRDC.	

Created: 17 November 2022 | Report: 121 - Progress Report
Progress Update | Status: Partially Achieved
Trial conducted as per the attachment. Due to the weather conditions and availability of strippers the trials were not differentiated and hence not separated. I am currently in the process of gathering GPS information from the consultant to pinpoint the relevant modules to conduct further analysis. Initial analysis suggests that the application of paraquat as a defoliant did not achieve the desired results as highlighted by the attached photos and leaf analysis.

Milestone Status:
Accepted?:
Locked?:

Created: 31 July 2023 | Report: 123 - Final Report
Final Update | Status: Achieved
Milestone achieved

One commercial scale trial was conducted. No further trials were conducted as the application of paraquat as a defoliant did not have the desired results.

Milestone Status: Green
Accepted?: Yes
Locked?: Yes

Communication Activities

Publications

CRDC-supported researchers are required to submit materials to CRDC for review before publishing. This is to check for accuracy, to ensure no IP or commercialisation issues, and to provide content for CRDC's Spotlight magazine. Researchers are also required to acknowledge CRDC's funding.

For more information see https://www.crdc.com.au/publications/crdc-researchers-handbook

Please review the list of publications connected to this project below. Note that of the state of a publication item is in ***Draft*** *it has not yet been submitted to CRDC for review and approval. Navigate to the Publication section called Drafts on the left side panel to review and submit the publication to CRDC for review. Note that publications created on this report will not be considered submitted to CRDC until you submit it from the Publication section.*

Journal		
Title	**Confidentiality**	**Expected Release Date**
Spindle vs Stripper- what's the verdict?	Public Release	27 October 2022
Description Updated publication of earlier version published in 2018		
State: Approved		

Article		
Title	**Confidentiality**	**Expected Release Date**
Brief Summary of the Effect of Nitrogen Application Rates on Cotton Fibre Quality	Public Release	20 October 2022
Description Summary of paper published earlier in 2022 by JCR		
State: Approved		

Article		
Title	**Confidentiality**	**Expected Release Date**
The Effect of Various Processing Stages During Ginning on Fibre Quality	Public Release	23 September 2022
Description Paper presented during the International Cotton Conference in Bremen in September 2022. This is an extract of a paper previously published in JCS in 2020		
State: Approved		

Article		
Title	**Confidentiality**	**Expected Release Date**
URGENT PRESCRIPTION: LESS GIN, MORE TONIC	Public Release	31 May 2023
Description Presented at the Beltwide Cotton Conference in Jnauary 2023. This was work funded by CRC and is attached for information purposes only		
State: Approved		

Journal		
Title	**Confidentiality**	**Expected Release Date**
Evaluation of Practices to Unwrap Round Cotton Modules	Public Release	1 February 2023
Description Paper compiled with USDA staff. Attached for information purposes only		
State: Approved		

I confirm that I have reviewed the Publications module and added any publications produced in the project that are not yet submitted to CRDC. I ensured to add final published versions. Yes

List proposed publications for future release. :

N/A

Recommendations for activities or other steps that may be taken:

Variability in fibre quality, although nominal at this stage, is of concern to the Australian cotton industry. It is thought that some of this variability can be explained by the expansion of the traditional growing areas to more veritable and extreme areas, the introduction of round modules, moisture content during harvesting,increase rain-fed (dryland) cotton production with the resulting increase in strippers, high application rates of nitrogen and the lack of systematic staging of RM's in the way that they were produced.

Some of these aspects have already been looked into and studied but as opportunities arise further work will be conducted.

Instruction: Refer to CRDC Outputs & Outcomes example document to assist in completing this section.

Project Outputs and Outcomes

Project Outputs

BMP Handbooks	
Output Type	**Description**
New/Updated Standards	Both the Ginning and Classing BMP Handbooks have been updated each year prior to the commencement of the ginning season. These Handbooks have been supplied to the BMP Customer Service Manager

Progress Reports	
Output Type	**Description**
Reports	As per the agreement progress reports have been compiled and submitted

Technical	
Output Type	**Description**
Reports	Technical reports have been compiled and submitted as described in milestone 2.1 and 2.3.

Peer and no peer review	
Output Type	**Description**
Publications	There are several peer and non peer review publications as described in milestone 2.3. Publications attached as required in the communications section.

Meetings/Workshops/Conferences	
Output Type	**Description**
Presentations	Several presentations have been conducted as described in milestone 2.1 and 2.3.

Project Outcomes

Various (BMP Handbooks, podcasts, publications)	
Output Type	**Description**
Increased knowledge about practices and products	Increased knowledge about practices and products by growers and industry stakeholders

Various (DCRA,USyd, Gins, Growers)	
Output Type	**Description**
Collaboration	Industry stakeholders, organisations, and research groups established and collaborate on future projects and activities

N/A but reduced variability and less likelihood of discounts	
Output Type	**Description**
Industry capacity building	Knowledge and skills of project stakeholders increased, and employment opportunities produced

CottonInfo fact sheets and attendance at meetings/workshops/conferences	
Output Type	**Description**
Extension services and training accessed	Extension services and training accessed by growers, industry stakeholders and others

Less variability and reduced potential of discounts	
Output Type	**Description**
Adoption of practices and products including behaviour change	Adoption of R&D outputs such as farm management practices and products by growers, industry stakeholders and others. Adoption includes the number of users and the total land area.

Project Collaborations

Research Institute		
Collaborator/s Name	**Organisation Name**	**Dates**
Ian Gourley	DCRA	1 September 2020 - 30 June 2023
Description Assisting in finding growers that would be interested in conducting commercial size trials on their farms		
Report ID: 123 Created at: 10 August 2023		

Research Institute		
Collaborator/s Name	**Organisation Name**	**Dates**
Guy Roth	University of Sydney	1 September 2020 - 30 June 2023
Description Conducting trials on campus and supplying graduate students to assist		
Report ID: 123 Created at: 10 August 2023		

Other		
Collaborator/s Name	**Organisation Name**	**Dates**
Kieran O'Keeffe	CottonInfo	1 September 2020 - 30 June 2023
Description Assisting in coordinating farm trials		
Report ID: 123 Created at: 10 August 2023		